

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



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basic imagery interpretation report

Activity at Severodvinsk Shipyard Complex
1 August - 31 December 1981 (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

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List of Acronyms and Abbreviations*This list in its entirety is UNCLASSIFIED*

A	Alfa class
C-I/II	Charlie I/II class
D-I/II/III	Delta I/II/III class
DDG	Guided missile destroyer
ECM	Electronic countermeasure
E-II	Echo II class
F	Foxtrot
FF	Frigate
FFG	Guided missile frigate
G-V	Golf V class
J	Juliett class
LCM	Mechanized landing craft
N	November class
NM	Nautical mile(s)
NMTC	Naval Missile Test Center
NPIC	National Photographic Interpretation Center
NSSSF	Nuclear Submarine Special Support Facility
O	Oscar class
P	Papa class
R	Romeo class
RP	Reporting position
RSB	Rectangular support barge
SALT	Strategic Arms Limitation Treaty
SLBM	Submarine-launched ballistic missile
SS	Attack submarine
SSAN	Nuclear-powered auxiliary submarine
SSB	Ballistic missile submarine
SSBN	Nuclear-powered ballistic missile submarine
SSG	Cruise-missile attack submarine
SSGN	Nuclear-powered cruise-missile attack submarine
SSN	Nuclear-powered attack submarine
T	Tango class
TY	Typhoon
VLF	Very low frequency
V-III	Victor III class
W	Whiskey class
Y	Yankee class
Y-I/II	Yankee I/II class
YFD	Floating drydock
YFDM	Medium floating drydock
YGTN	Floating target barge
YD	Floating crane
YR	Floating workshop
YRD	Auxiliary repair dock
YRRN	Radiological repair barge
Z	Zulu class

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Activity at Severodvinsk Shipyard Complex					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	See below	See below	See below	See below	See below
MAP REFERENCE					
SAC. USATC, Series 200, Sheet 0092-22, scale 1:200,000					
LATEST IMAGERY USED			NEGATION DATE (if required)		
See Abstract			NA		

BASIC DESCRIPTION

4. (S/WN) The Severodvinsk Shipyard Complex (Figure 1) consists of four installations: Shipyard 402, Shipyard Yagry Island, Nuclear Submarine Special Support Facility, and Naval Base West. RPs used throughout this report and the submarine movements shown in the table are keyed to Figure 1.

Shipyard 402

Typhoon-Series Activity

5. (S/WN) The Typhoon SSBN¹ was continuing post-sea-trials maintenance and adjustments at the fitting-out quay (RP 9) through [redacted] the Typhoon was underway adjacent to the main quay for additional trials which continued through at least [redacted]. Between [redacted] the Typhoon was again at RP 9, and by [redacted] it had been placed inside the launch dock for hull inspection and maintenance (Figure 2). The aft control surfaces and propulsion system were concealed by four arched roof panels throughout the drydocking period. Extensive work was ongoing in the areas of the stern, of the missile tubes, and of the bow weapons-loading hatch. On numerous occasions while the submarine was in the launch dock, tops of the personnel hoists/work platforms normally on the Typhoon fitting-out quay could be seen inside the missile tubes of the submarine. Between [redacted] the Typhoon was removed from the launch dock and repositioned at RP 9, where it was undergoing pretrial workup and probable onloading of SS-NX-20 ballast cans. The Typhoon was probably at the quay on [redacted] but had departed the complex by [redacted] the Typhoon had returned from sea trials and was at the calibration pier, where it was undergoing deperming through [redacted]. After additional underway-workup at RP 9 between [redacted] the Typhoon was not observed at the complex on [redacted]. However, on [redacted] a submarine (most probably the Typhoon) was at the SLBM loading facility at Naval Base West; on [redacted] an SS-NX-20 SLBM was launched from the White Sea² (most probably from the Typhoon SSBN).

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6. (S/WN) On [redacted] three probable SS-NX-20 ballast cans for the Typhoon SSBN were on the quay adjacent to the submarine. The probable ballast cans were [redacted] in length and [redacted] in diameter. By [redacted] the number of probable ballast cans had increased to five; by [redacted] to seven; and by [redacted] to at least 17 (Figure 2). This increase coincided with the movement of the Typhoon SSBN into the launch dock. On [redacted] the number of probable ballast cans could not be determined; however, on [redacted] after the departure of the Typhoon, the number of probable ballast cans had decreased to one. The arrival of the probable ballast cans at the shipyard—coincidental with the drydocking of the submarine for hull inspection/maintenance and the deperming of the Typhoon after its fourth period of sea trials—was probably necessary for the ballasting of the submarine for the SS-NX-20 missile launch on [redacted].

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7. (S/WN) Numerous pieces of submarine components and plating were observed throughout the reporting period. Components related to the Typhoon SSBN construction program which were observed include the two- and four-hole internal missile bay deck plates and possible Typhoon SSBN reactor plates. On [redacted] a tapered pressure hull section was underneath shed B in the pressure hull staging area behind construction hall 1. The pressure hull section was positioned on its larger end, which was between 8 and 10 meters in diameter, and tapered to

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ABSTRACT

1. (S/WN) This report describes significant activity observed at the Severodvinsk Shipyard Complex, USSR, from 1 August through 31 December 1981, the information cutoff date. All applicable satellite imagery of the complex acquired during this period was used in the preparation of this report.
2. (S/WN) Significant events that have occurred at this complex since the previous activity report [redacted] include the drydocking of the Typhoon SSBN, the rollout of D-III SSBN unit 14, the deployment of D-III SSBN unit 13 and the Oscar SSGN, and the dismantlement of two Y-I SSBNs.
3. (S/WN) This report contains a layout of the Severodvinsk Shipyard Complex, 11 annotated photographs, and a table of submarine activity. The layout of the complex shows the major structures and reporting positions, and the table outlines the movement of all submarines at the complex, with the exception of the inactive units at Naval Base West.

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Table 1.
Submarine Activity, 1 August - 31 December 1981
(Items keyed to Figure 1)
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between [] meters at its smaller end. Neither the length of the section nor the submarine construction program for which this section is intended could be determined. No missile bay foundation subassemblies were identified during the period.

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8. (S/WN) The Stern Horn YRD—associated with construction hall 3 (via the transfer facility at the east quay) and the Leningrad Heavy Equipment Plant Kirov 185 []—departed the shipyard between [] with both the associated crates in its well. When the YRD was observed at the Kirov Plant on [] both crates had been offloaded and positioned between the transfer platform and the doors of the associated building.

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D-Series Activity

9. (S/WN) Final alignment of the flotation device supports positioned along launch rail D (Figure 3) on 7 June was accomplished by [] snow had been cleared from the launch rail, and by [] D-III SSBN unit 14 had been rolled out of the

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construction hall. A probable D-series, outer-hull keel plate was on the rail line southeast of the launch basin on [] and in the pressure hull staging area behind construction hall 1 (Figure 4) on []. Track activity observed along the loading rail into construction hall 1 on [] indicated that the [] pressure hull section underneath staging shed B (Figure 4) for most of the period had probably been moved inside the construction hall.

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10. (S/WN) D-III SSBN unit 13 completed fitting-out during the period and departed the complex for its initial sea trials between [] a D-III SSBN (probably unit 13) had returned to RP 27, where unidentified maintenance and adjustments were continuing through [] the D-III SSBN had departed the complex and was probably enroute to its North Fleet operating base. An additional D-III SSBN was at the shipyard for unidentified maintenance/repairs from [] and had departed the complex by []. A D-II SSBN was at the main quay undergoing unidentified maintenance/repairs from [] through the remainder of the period.

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Other Submarine Activity

11. (S/WN) Unidentified maintenance/repairs continued on the Oscar SSGN inside the launch dock through at least [] the launch dock (with the Oscar SSGN in its well) had been moved from its previous position in front of launch rail 1 of construction hall 3. Heavy clouds and haze precluded the identification of the Oscar until [] when the submarine was at the main fitting-out quay (Figure 5). On [] two SS-NX-19 missile canisters and one probable SS-NX-19 crate were on railcars on the quay adjacent to the Oscar (Figure 5). The aftermost starboard missile tube door on the Oscar was open, and a crane was being operated over the submarine. Between [] the Oscar SSGN departed the complex for deployment to its North Fleet operating base and was observed on [] entering the harbor at Guba Litsa Submarine Base South [].

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12. (TSR) The expected delivery of a newly constructed C-II SSGN from Gorkiy Shipyard 112 [], discussed in the previous activity report,¹ did not occur during this period. After the departure of the Spoonbill YRD from Severodvinsk between [] the 112B YRRN—usually associated with the fitting-out at Severodvinsk of Gorkiy-constructed submarines—unexpectedly departed Severodvinsk between []. The Spoonbill YRD and the 112B YRRN were observed at Gorkiy on [] respectively. By [] the Spoonbill YRD had returned to Severodvinsk; however, no evidence of the delivery of a newly constructed submarine was observed.

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13. (S/WN) Between [] an A SSN (probably unit 6) was at RP 29 after the second period of sea trials. The A SSN was on additional trials between at least 1 and [] and was again at the fitting-out quay between []. The submarine was in the YFDM for undetermined hull maintenance or possibly for the application/repair of its anechoic coating. The movement of pressure hull sections under the two newly constructed staging sheds adjacent to construction hall 2 and in and out of the pressure test facility may indicate the staging of hull sections prior to the launch of a submarine from construction hall 2. In addition to the approximately 9-meter-diameter, ridge-roof covered

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hull section seen since mid-1979, a hull section with a diameter of approximately [] and a length of approximately [] was under the south staging shed for most of the period. Construction of the additional launch cradle at the east end of the launch way of construction hall 2 was continuing during the period; no indications of an impending launch from this hall were observed.

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14. (S/WN) Between [] the Leningrad submersible (which arrived at Naval Base West in late August 1979) was placed on the transfer dollies on launch rail B. The transfer dollies have been positioned on launch rail B (Figure 3) since [] [] the Leningrad submersible was placed inside construction hall 1 for overhaul/repairs/modification.

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Construction Activity

15. (S/WN) During this reporting period, construction was continuing on the new quays adjacent to the powerplant and the fitting-out quay for the Typhoon SSBN. Six additional arched roof panels were assembled for installation on the launch dock associated with construction hall 3. Two completed panels were inside the launch dock, two were on launch rail 3, one was on the transfer platform at the east quay, and one was on the main quay adjacent to construction hall 2. Construction of the numerous fabrication and support buildings throughout the complex was continuing.

16. (S/WN) Between [] a YFDM arrived at the shipyard. The YFDM has an overall length of 144 meters, an outside width of 35 meters, and a well width of 24 meters. Two wing wall cranes were in the well and have been installed. If the YFDM remains at Severodvinsk, it will significantly increase the out-of-the-water repair capability of the shipyard complex.

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Shipyard Yagry Island

17. (S/WN) Postoverhaul fitting-out of the D-I SSBN, removed from the repair hall in late June, was continuing at RP 2 throughout the period; however, on [] the submarine was not observed at the complex and was probably undergoing sea trials. On [] this submarine appeared to be ready for sea and was probably transferred to its North Fleet operating base prior to the freezing-over of the entrance to the White Sea. Between [] a D-I SSBN was removed from the south bay of repair hall 2, where it had been undergoing overhaul and refueling since probably []. This submarine remained on the north ledge of the ship-lifting basin through [] and was being removed from the basin on []. [] the D-I SSBN was undergoing postoverhaul fitting-out at RP 13 and will probably winter-over at the shipyard. Between [] the D-I SSBN which had been undergoing preliminary overhaul at RP 13 since its arrival at the shipyard on [] was repositioned on the north ledge of the ship-lifting basin. By [] the submarine had been placed inside the south bay of repair hall 2.

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18. (S/WN) Overhaul and refueling of the Y-I SSBN in the north bay of repair hall 1 since [] and of the E-II SSGN in the south bay of repair hall 1 since [] were

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continuing throughout the period. The Y-I SSBN on the north ledge of the ship-lifting basin during the previous reporting period¹ was repositioned inside the north bay of repair hall 2 between [redacted] occupancy of the repair halls was as follows:

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Repair Hall/Position	Occupant	Since
No 1/north bay	Y-I SSBN	[redacted]
No 1/south bay	E-II SSGN	
No 2/north bay	Y-I SSBN	
No 2/south bay	D-I SSBN	

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19. (S/WN) Postoverhaul fitting-out of the E-II SSGN undergoing overhaul and refueling at the shipyard since February 1977¹ was continuing at RP 3 through at least [redacted] After sea trials on [redacted] the E-II SSGN was again at the quay between [redacted] after an additional sea trials period, it departed the shipyard, probably for its North Fleet operating base, between [redacted]

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20. (S/WN) The V-III SSN which returned to the shipyard complex during the previous reporting period¹ for undetermined hull maintenance/repairs was at sea at least five times during the current period, operating from both the NSSSF and the Shipyard Yagry Island. No significant topside activity was observed; between [redacted] this submarine departed the complex, probably enroute to its North Fleet operating base. Between [redacted] and [redacted] A SSN unit 7 was at RP 11, probably for final fitting-out and adjustments before departing the complex by [redacted] This submarine was launched at Leningrad

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Shipyard Sudomekh 196 [redacted] and departed the Leningrad area between [redacted] in the A SSN-associated YRD. The YRD was not observed at the Severodvinsk Complex; it is probable that the A SSN transited the White Sea under its own power, allowing the YRD to return to Leningrad prior to the freezing-over of the inland waterway.

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21. (S/WN) Dismantled Y-class SSN units 1 and 2 were at the quay throughout the period; no significant topside activity was observed. Between [redacted] Y-class SSN unit 5 was removed from the north bay of repair hall 2 and positioned on the north ledge of the ship-lifting basin (Figure 6), where overhaul/modifications were ongoing through [redacted] unit 5 had been repositioned in the south bay of repair hall 2, where it remained through [redacted] [redacted] unit 5 had been removed from the repair hall and had been repositioned on the construction site of repair hall 3, immediately forward of the detached missile

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bay. This was the third time that unit 5 had occupied a repair hall for a relatively short period. No significant topside activity was identified on the submarine after its removal from the repair hall. The platform around the reactor compartments and removed outer-hull plate is similar to that of Y-class SSN unit 4 prior to its return to construction hall 1 at Shipyard 402 in July 1980. During this reporting period, no additional dismantlement was accomplished on the detached missile bay of unit 5. The openings left by the removal of numbers 1 and 8 missile tubes have been plated over and externally framed, indicating that some future use of this component is intended.

22. (S/WN) Between [] the Y-I SSBN which has had all of its missile tube doors open since its [] arrival at the NSSSF was repositioned at RP 13. Between [] the Y-I SSBN was moved to the south ledge of the ship-lifting basin (Figure 6), where the start of dismantlement was confirmed on []. The dismantlement of this submarine with its 16 SS-N-6 missile tubes, in addition to the four SS-N-6 missile tubes removed from the G-IV SSB at Rosta Naval Base and Ship Repair Yard Sevmorput [], is in compensation for the Typhoon SSBN which went on sea trials between []. The dismantlement of the Y-I SSBN was complete by [] when the missile bay had been completely removed and the bow and stern sections of the submarine had been rejoined (Figure 7). Movement of the bow and stern sections of this submarine was accomplished on the rails which were installed on the ledge of the basin during May and June 1981. The installation of the rails was required after the unsatisfactory procedure used in the floating of the bow and stern sections of Y-class SSN unit 1 from the south to north ledge of the basin in June 1978. The rails are 180 meters long (further extension is possible) and 6 meters wide; the span of the dollies used (measured after the submarine was removed from the basin ledge) for the dismantlement of the submarine was [] meters. This submarine has been redesignated Y-class SSN unit 7. By [] Y-class SSN unit 7 had been removed from the basin and repositioned at the NSSSF, and no significant activity was observed on unit 7 for the remainder of the period.

23. (S/WN) Between [] the Y-I SSBN which had been undergoing preliminary dismantlement at the NSSSF (Figure 8) since [] was positioned on the rails of the south ledge of the ship-lifting basin. On [] at least the upper portion of nine missile tubes had been removed. Missile tube components were on the basin ledge immediately forward of the bow of the submarine. Dismantlement was continuing throughout the remainder of the period. The dismantlement of this submarine is in compensation for D-III SSBN unit 13, which began its initial sea trials between [].

24. (S/WN) Construction of repair hall 3 and construction in the fenced area west of the shipyard were continuing at a slow pace.

Nuclear Submarine Special Support Facility

25. (S/WN) A D-I SSBN was at the facility between []. No significant activity was observed; however, the arrival of a D-I SSBN at the complex prior to the freezing-over of the entrance to the White Sea may indicate that this unit will be the next D-I SSBN to undergo a major overhaul and refueling at Shipyard Yagry Island. Additionally, a Y-I SSBN arrived at the facility between []. This Y-I could also be intended for overhaul and refueling or possibly for eventual dismantlement in compensation for D-III SSBN unit 14.

26. (S/WN) Overhaul and refueling of the E-II SSGN which arrived at the complex between [] were continuing throughout the period. By [], all missile tubes had been removed and placed on the quay adjacent to the submarine (Figure 8); by []

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[] they had been moved to the quay at Shipyard Yagry Island. Between []
[] the reactor access plate removed by [] was reinstalled on the submarine;
however, work was continuing in the area of the missile tubes. The E-II SSAN (formerly
designated 402T) was at the quay on [] but was not observed in cloud-free
areas of the complex on imagery of [] The purpose of the return of the E-II SSAN to
the complex is not known.

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27. (S/WN) By [] the fourth Leningrad-constructed V-III SSN had been delivered
to the facility for final fitting-out and sea trials. This submarine was launched from Leningrad
Shipyard Admiralty 194 [] between [] and departed the Leningrad area
between [] in the Blunt Bow YRD. The V-III SSN was at the quay
outboard an RSB and the YRD was in the estuary (Figure 9). The V-III SSN underwent at least two
periods of sea trials and between [] departed the complex, enroute to its North
Fleet operating base.

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28. (S/WN) Unidentified reactor work on the inactive N SSN in the YFD was continuing
through at least [] An RSB and a special-purpose barge were alongside for most of the
period; by [] the submarine had been removed from the YFD and had departed the
facility. The present location and status of the submarine are not known; however, the submarine
was probably not operational when it departed the Severodvinsk area. When the unit was last
observed on [] hull openings over the reactor and machinery spaces remained open.

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29. (S/WN) No significant activity was observed on the stern section and aft control surfaces
of A SSN unit 1.

30. (S/WN) Construction was continuing on the waste treatment plant northwest of the
facility.

Naval Base West

31. (S/WN) Missile-associated combatants not usually observed at the base but seen during
this period included probably the Typhoon SSBN, a C-I SSGN, and the modified Kashin DDG
(Provorny). On [] a submarine (most probably the Typhoon SSBN) was alongside the
SLBM loading facility at RP 6 and was probably engaged in the loading of the SS-NX-20 SLBM used
in the first at-sea launch of the SLBM on [] Checkout of the missile-handling
equipment continued throughout most of the period, with the SS-NX-20 load simulator posi-
tioned on the erector (Figure 10); however, the lifting of the load simulator by the gantry crane
was not observed. An SS-NX-20-associated, 19-meter railcar (Figure 11) was in the immediate
vicinity of the SLBM loading facility from early October through the end of December and was
probably involved in the checkout of the handling equipment as well as in the loading of the
missile on the submarine. A Ropucha LST was underneath the gantry crane on []
however, loading/unloading was not observed. The erection of the extremely high lattice tower
at the SLBM loading facility (Figures 10 and 11) was complete between [] The
tower is approximately 130 meters high, with a [] base. The tower was under
construction for approximately 9 months and will serve as a combined light tower and lightning
arrester. Construction of the second tower was continuing throughout the period. On []
[] a probable SS-NX-20 missile/canister cradle was at the SLBM loading facility; on []
[] six probable cradles were observed (Figure 11). These probable cradles are similar to
the one seen on [] in area A of the missile assembly/checkout areas at Nenoksa Naval

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Missile Test Center [] Although the exact purpose of these probable cradles is not known, they appear to be associated with the 19-meter railcar which is associated with the SS-NX-20 SLBM. 25X1

32. (S/WN) A C-I SSGN was at the base on [] only. No missiles, missile-related equipment associated with the C-I SSGN, or other significant activity was observed. 25X1

33. (S/WN) No significant activity was observed on the Z-V SSB during the period. Portions of the sail and outer-hull plating are still removed, and the two SS-N-4 missile tubes remain in place.

34. (S/WN) The extensively modified Kashin DDG arrived at the base on [] (Figure 12). After a brief at-sea period, the ship was again at the base between [] and [] Work was ongoing in the area of the unidentified weapons position; however, missiles or missile-handling equipment related to the modified Kashin was not identified. 25X1
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35. (S/WN) Construction was continuing on the improvements to the quays. Also during the period, dredging in the area of the SLBM loading facility was underway. Two railspurs—leading to two additional possible storage bunkers in the early stages of construction—were under construction.

REFERENCES

IMAGERY

(S/WN) All applicable satellite imagery acquired from 1 August through 31 December 1981 was used in the preparation of this report. The [] imagery provided the most recent usable coverage available prior to the information cutoff date of 31 December. 25X1

MAPS OR CHARTS

SAC. US Air Target Chart, Series 200, Sheet 0092-22, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. NPIC. [] RCA-09/0033/81, *Activity at Severodvinsk Shipyard Complex, 1 February—31 July 1981 (S)*, Nov 81 (TOP SECRET []) 25X1
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2. DEFSMAC. S/DQ/983-81, *SS-NX-20 Launched From the North Sea, 27 December 1981 (S)*, 271522Z Dec 81 (SECRET)
3. NPIC. [] RCA-17/0001/81, *Developments at Nenoksa and Balaklava Missile Test Centers (S)*, Dec 81 (TOP SECRET []) 25X1
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